

CLAIMS

What is claimed is:

1. A digital camera for capturing an image comprising:
an image sensor;
5 a capture trigger;
a capture buffer comprising a plurality of buffer locations, each of which is available for storing image data; and
a processing system configured to detect activation of the capture trigger and receive a corresponding image frame from the image sensor, to store the corresponding image frame in an available buffer location, to perform image processing on the corresponding image frame, and to designate the available buffer location in which the corresponding image frame is stored as unavailable for image storage until the image processing is complete.
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- 15 2. The digital camera of claim 1 wherein the processing system further is configured to detect a second activation of the capture trigger and receive a second corresponding image frame from the image sensor, to store the second corresponding image frame in a second available buffer location, to perform image processing on the second corresponding image frame, and to designate the second available buffer location as unavailable for image storage until the image processing is complete.
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3. The digital camera of claim 1 wherein the processing system is configured to receive auxiliary image frames from the image sensor and to store each auxiliary image frame in another available buffer location.
4. The digital camera of claim 3 wherein the processing system further is 25 configured to use at least one auxiliary image frame to perform the image processing on the corresponding image frame and to designate at least one another available buffer location in which the at least one auxiliary image frame is stored as unavailable for image storage until the image processing is complete.

5. The digital camera of claim 1 wherein the processing system further is configured to compress the corresponding image frame prior to storing the corresponding image frame in the available buffer location with at least one compression method selected from a group consisting of A-law compression, μ -law compression, and discard mode compression.

6. The digital camera of claim 1 wherein the processing system further is configured to perform the image processing according to an image processing timing mode selected from at least one member of a group consisting of: performing the image processing immediately after storing the corresponding image frame in the 10 available buffer location, performing the image processing after all buffer locations in the capture buffer are unavailable, performing the image processing after all buffer locations in the capture buffer are unavailable and until at least one unavailable buffer location becomes available, and performing the image processing after all buffer locations in the capture buffer are unavailable and until all buffer locations become 15 available.

7. A method for capturing an image in a digital camera, the digital camera comprising an image sensor, a capture trigger, a capture buffer comprising a plurality of buffer locations each of which is available for storing image data, and a processing system, the method comprising:

20 detecting activation of the capture trigger and receiving a corresponding image frame at the processing system from the image sensor; storing the corresponding image frame in an available buffer location; performing image processing on the corresponding image frame; and designating the available buffer location in which the corresponding image 25 frame is stored as unavailable for image storage until the image processing is complete.

8. The method of claim 7 further comprising:
detecting a second activation of the capture trigger and receiving a second corresponding image frame at the processing system from the image 30 sensor;

storing the second corresponding image frame in a second available buffer
location;

performing image processing on the second corresponding image frame; and
designating the second available buffer location in which the second
corresponding image frame is stored as unavailable for image storage
until the second image processing is complete.

5 9. The method of claim 7 further comprising receiving a plurality of
auxiliary image frames from the image sensor and storing each auxiliary image frame
in another available buffer location.

10 10. The method of claim 9 further comprising:
detecting a plurality of second activations of the capture trigger and receiving
a plurality of second corresponding image frames at the processing
system from the image sensor;

storing each of the plurality of second corresponding image frames in second
available buffer locations;

15 performing image processing on the second plurality of corresponding image
frames; and

designating each of the second available buffer locations in which the second
plurality of corresponding image frames are stored as unavailable for
image storage until the image processing is complete for that second
corresponding image frame.

20 11. The method of claim 10 further comprising receiving at least one of the
auxiliary image frames before receiving at least one of the second plurality of
corresponding image frames.

25 12. The method of claim 9 further comprising using at least one auxiliary
image frame to perform the image processing on the corresponding image frame and
designating the at least another available buffer location in which the at least one
auxiliary image frame is stored as unavailable for image storage until image
processing is complete.

13. The method of claim 9 further comprising compressing the plurality of auxiliary image frames prior to storing the plurality of auxiliary image frames in the another available buffer locations with at least one compression method selected from a group consisting of A-law compression, μ -law compression, and discard mode compression.

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14. The method of claim 7 further comprising compressing the corresponding image frame prior to storing the corresponding image frame in the available buffer location with at least one compression method selected from a group consisting of A-law compression, μ -law compression, and discard mode compression.

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15. The method of claim 7 further comprising performing the image processing according to an image processing timing mode selected from at least one member of a group consisting of: performing the image processing immediately after storing the corresponding image frame in the available buffer location, performing the image processing after all buffer locations in the capture buffer are unavailable, performing the image processing after all buffer locations in the capture buffer are unavailable and until at least one unavailable buffer location becomes available, and performing the image processing after all buffer locations in the capture buffer are unavailable and until all buffer locations become available.

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16. A method for capturing an image in a digital camera, the digital camera comprising an image sensor, a capture trigger, a capture buffer comprising a plurality of buffer locations each of which is available for storing image data, and a processing system, the method comprising:

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detecting a plurality of activations of the capture trigger and receiving a plurality of corresponding image frames at the processing system from the image sensor;

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storing each corresponding image frame in a corresponding available buffer location;

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performing image processing on each corresponding image frame; and designating each corresponding available buffer location in which each corresponding image frame is stored as unavailable for image storage

until the image processing is complete for that corresponding image frame.

17. The method of claim 16 further comprising receiving auxiliary image frames from the image sensor and storing each auxiliary image frame in another 5 available buffer location.

18. The method of claim 17 further comprising receiving at least one of the auxiliary image frames before receiving at least one of the plurality of corresponding image frames.

19. The method of claim 17 further comprising using at least one auxiliary 10 image frame to perform the image processing on at least one of the plurality of corresponding image frames and designating at least one another buffer location in which the at least one auxiliary image frame is stored as unavailable until the image processing is complete on the at least one corresponding image.

20. The method of claim 16 further comprising compressing the 15 corresponding image frames prior to storing the corresponding image frames in the corresponding available buffer locations with at least one compression method selected from a group consisting of A-law compression, μ -law compression, and discard mode compression.